What is claimed is:

1. A nitride semiconductor light emitting device comprising:

an active layer formed of a GaN family compound semiconductor; and

multi-quantum barrier layers formed by repeatedly depositing a double layer consisting of an $Al_xGa_{1-x}N$ layer and a GaN layer at least two times, at either the upper or lower side of the active layer, by which an energy band has a multi-quantum barrier structure,

wherein $0<x<1$.

2. The nitride semiconductor light emitting device of claim 1, further comprising GaN light waveguide layers formed at the upper and lower sides of the active layer or at the upper and lower sides of the multi-quantum barrier layers.

3. The nitride semiconductor light emitting device of claim 1, wherein the active layer is formed by depositing a double layer consisting of an $In_xGa_{1-x}N$ layer and an $Al_yGa_{1-y}N$ layer, a double layer consisting of an $In_xGa_{1-x}N$ layer and an $In_yAl_zGa_{1-y-z}N$ layer, a double layer consisting of an $In_xAs_yGa_{1-x-y}N$ layer and $In_zGa_{1-z}N$ layer or a double layer consisting of an $In_xAs_yGa_{1-x-y}N$ layer and an $Al_yGa_{1-y}N$ layer a predetermined number of times to form a multi-quantum well structure and at this time, $0\leq x\leq 1$, $0\leq y<1$, $0\leq z<1$, $x+y<1$ and $y+z<1$.

4. A nitride semiconductor light emitting device comprising:

an active layer formed of a GaN family compound semiconductor; and

multi-quantum barrier layers formed by repeatedly depositing a double layer consisting of an $Al_xGa_{1-x}N$ layer and an $Al_yGa_{1-y}N$ layer at least two times, at either the upper or lower side of the active layer, by which an energy band has a multi-quantum barrier structure,

wherein $0<x<1$, $0\leq y<1$, and $x>y$.

5. The nitride semiconductor light emitting device of claim 4, wherein if $0<x<1$, $0\leq y<1$ and $x>y$, the multi-quantum barrier layer is formed by making the

thickness of the $Al_xGa_{1-x}N$ layer of each double layer differ from the thicknesses of the $Al_xGa_{1-x}N$ layers of the other double layers, thereby making the energy levels of multi-quantum barrier layers differ from each other.

6. The nitride semiconductor light emitting device of claim 4, wherein if $0<x<1$, $0\leq y<1$ and $x>y$, the multi-quantum barrier layer is formed by making the thickness of the $Al_yGa_{1-y}N$ layer of each double layer differ from the thicknesses of the $Al_yGa_{1-y}N$ layers of the other double layers, thereby making the energy levels of multi-quantum barrier layers differ from each other.

7. The nitride semiconductor light emitting device of claim 4, wherein if $0<x<1$, $0\leq y<1$ and $x>y$, the multi-quantum barrier layer is formed by making the value of x for of aluminum of the $Al_xGa_{1-x}N$ layer of each double layer differ from the value of x for the $Al_xGa_{1-x}N$ layers of the other double layers, thereby making the energy levels of multi-quantum barrier layers differ from each other.

8. A nitride semiconductor light emitting device comprising:

an active layer formed of a GaN family compound semiconductor; and

multi-quantum barrier layers formed by repeatedly depositing a double layer consisting of an $Al_xGa_{1-x}N$ layer and an $In_yGa_{1-y}N$ layer at least two times, at either the upper or lower side of the active layer, by which an energy band has a multi-quantum barrier structure,

wherein $0<x<1$ and $0<y\leq 1$.

9. The nitride semiconductor light emitting device of claim 8, wherein the multi-quantum barrier layer is formed by making the thickness of the $Al_xGa_{1-x}N$ layer of each double layer differ from the thicknesses of the $Al_xGa_{1-x}N$ layers of the other double layers, thereby making the energy levels of multi-quantum barrier layers differ from each other.

10. The nitride semiconductor light emitting device of claim 8, wherein the multi-quantum barrier layer is formed by making the thickness of the $In_yGa_{1-y}N$ layer of each double layer differ from the thicknesses of the $In_yGa_{1-y}N$ layers of the other double layers, thereby making the energy levels of multi-quantum barrier layers differ from each other.

11. The nitride semiconductor light emitting device of claim 8, wherein the multi-quantum barrier layer is formed by making the value of x for the $Al_xGa_{1-x}N$ layer of each double layer differ from the value of x for the $Al_xGa_{1-x}N$ layers of the other double layers, thereby making the energy levels of multi-quantum barrier layers differ from each other.

12. A nitride semiconductor light emitting device comprising:

a substrate;

an active layer formed on the substrate, in which light emission occurs;

an n-type material layer for generating a laser beam which is formed between the substrate and the active layer and includes an n-type clad layer for preventing light loss in the direction of installation of the substrate;

a carrier blocking layer, a p-type waveguide layer and a p-type compound semiconductor layer which are sequentially deposited on the active layer; and

an n-type electrode and a p-type electrode generating a potential difference for diffusion of electrons to the active layer.

13. The nitride semiconductor light emitting device of claim 12, wherein the n-type material layer comprises:

an n-type waveguide layer formed between the n-type clad layer and the active layer; and

an n-type compound semiconductor layer formed between the n-type clad layer and the substrate and connected to the n-type electrode.

14. The nitride semiconductor light emitting device of claim 12 or claim 13, wherein the active layer is a III-V group nitride compound semiconductor layer having a multi-quantum well structure.

15. The nitride semiconductor light emitting device of claim 12 or claim 13, wherein the n-type clad layer has a thickness between 0.5 μm and 1.7 μm.

16. The nitride semiconductor light emitting device of claim 12, wherein the p-type waveguide layer has a thickness between 0.15 μm and 0.22 μm, by which light mode and light gain are maximized.

17. The nitride semiconductor light emitting device of claim 12, wherein the carrier barrier layer is a mono-layer or a multi-quantum barrier layer.

18. The nitride semiconductor light emitting device of claim 17, wherein the multi-quantum barrier layer consists of double layers of an $Al_xGa_{1-x}N$ layer and an $In_yGa_{1-y}N$ layer ($0<x<1$, $0<y\leq 1$) and is formed by making the thickness of the $In_yGa_{1-y}N$ layer of each double layer differ from the thicknesses of the $In_yGa_{1-y}N$ layers of the other double layers, thereby making the energy levels of multi-quantum barrier layers differ from each other.

19. The nitride semiconductor light emitting device of claim 17, wherein the multi-quantum barrier layer consists of a plurality of double layers of an $Al_xGa_{1-x}N$ layer and an $In_yGa_{1-y}N$ layer ($0<x<1$, $0<y\leq 1$) is formed by making the value of x for the $Al_xGa_{1-x}N$ layer of each double layer differ from the value of x for the $Al_xGa_{1-x}N$ layers of the other double layers, thereby making the energy levels of multi-quantum barrier layers differ from each other.

20. The nitride semiconductor light emitting device of claim 12, wherein the p-type waveguide layer and the p-type compound semiconductor layer are the same

material layer, however the doping concentration of the p-type compound semiconductor layer is higher than that of the p-type waveguide layer.

21. The nitride semiconductor light emitting device of claim 12, wherein the material of the substrate is one selected from the group consisting of sapphire, silicon carbon (SiC), silicon (Si), gallium arsenic (GaAs), gallium nitride (GaN) and zinc oxide (ZnO).